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# ONTARIO FISH AND WILDLIFE REVIEW

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DEPARTMENT OF LANDS AND FORESTS

HON. A. KELSO ROBERTS, Q.C. MINISTER

F.A. MACDOUGALL, DEPUTY MINISTER



# ONTARIO FISH AND WILDLIFE REVIEW

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Contents	Page
Woodland Caribou In Ontario <i>by D.W. Simkin</i>	3
Thar's Gold in Them Thar Hills <i>by Carl E. Monk</i>	9
The Fort Severn Goose Hunt <i>by John L. Lessard</i>	15
Fish Stocking - 1965 Style. <i>by Carman Douglas</i>	19
Indian Time <i>by Dr. Edward S. Rogers</i>	23
The Experimental Trawl Fishery in Black Bay - Lake Superior <i>by C.A. Elsey</i>	27

## THE COVER

The Department of Lands and Forests' Southern Research Station is situated amid beautiful rural surroundings near Maple, Ontario, some eighteen miles north of Toronto. Our cover photograph shows the Mechanical Research Building while the Biological Building and the Limnological Laboratory are depicted, respectively, on the back and inside-back cover. Photos are by Ted Jenkins.

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## Delayed Panic

For over two decades, a large number of biologists, concerned with water quality in North America, have ineffectively warned the public that our water resources were being threatened at an alarming rate. Not one of them on this continent has been able to impress this country as Rachel Carson did in her magazine articles on the dangers of insecticides.

What's gone wrong? Why are the same people unconcerned about water pollution but vitally concerned with the use of toxic chemicals?

Perhaps the slow, often irreversible process of pollution of water cannot be understood by the majority until it has gone too far—until we have not one but one hundred “dead seas” with connecting barren streams.

Many complaints of “pollution” we receive involve introduction into the water inert materials such as paper, cans, bottles and junk. The complainant may be rightly indignant that such materials “pollute the view”. But this kind of material is not as dangerous as that from the hidden outflows from septic tanks or the overflows from the household wash-water.

The debris we can see on the water is innocuous in comparison to the “debris” dissolved in the water. By the time we can “see” that water is polluted by the presence of dead fish, rotting algae, “swimming prohibited” signs, murky colors, or scums on the surface, the damage is often irreparable. Pollution needs to be controlled long before that.

It needs to be controlled now: in your house and mine, in the factory, on the farm, and at the cottage—in the water, on the land and in the air. Pollution control is everybody's business—yours, theirs, ours, his, hers and mine.



*Craters, dug by caribou on frozen lake, presumably to obtain water from slush.  
Photo by D.W. Simkin.*

# WOODLAND CARIBOU IN ONTARIO

*by D.W. Simkin*

*Biologist, Southern Research Station*

There are, at present, an estimated 13,000 woodland caribou in the Province of Ontario. At one time, when vast, comparatively unbroken tracts of mature climax forests covered most of the northern two-thirds of the Province, there were many more caribou than at present. With the invasion of the north country by the pulp cutter, farmer and miner, much of the former range was altered or destroyed and rendered unsuitable for caribou.

Since woodland caribou seldom can be found in areas settled by man, very little was known about Ontario herds until the early 1950's when the Department of Lands and Forests began a study of the species in the Province. Although this study is far from complete, we now know much more about them than we did prior to this time.

Accurate information on the distribution and relative abundance of the species was the first objective. Since caribou tend to move about in small herds during the winter and frequent areas having a scarcity of heavy cover, it is not usually difficult for observers in low-flying aircraft to find them at this time of year. Consequently, a plan was made to systematically cover all of northern Ontario from 51°N to the shores of Hudson and James Bays; selected areas south of the 51st parallel were also included.

Uniform coverage was obtained by drawing parallel flight lines on the maps at either four-, or eight-mile intervals. A more intensive survey was required

in denser cover, and lines were placed four miles apart. Across most of the range, transects were located eight miles apart. These lines were then flown by four-man crews: pilot, navigator-recorder and two observers in either a De Havilland Beaver or Otter aircraft, flying at an average altitude of 700 feet.

Although information on the distribution of caribou was the main objective, a second purpose was to determine their relative densities in different areas. To obtain this information, it was necessary to have some method of estimating the population for each area. Thus, a fairly accurate measurement of the area covered during flights was required. A measurement of miles flown was very simple to calculate, but to estimate the area covered on the ground, markers (pieces of typewriter ribbons about four feet long) were placed at specific locations on the aircraft wing struts. These were located so that an observer, seated behind the cockpit, and scanning the area between the trailing ribbon and another mark on the strut, would cover an area twice as wide as the altitude at which the aircraft was flying.

All caribou observed on transects were counted and, when possible, they were classified as to calf or adult. Animals seen outside the transects were also counted and classified but were not used in determining population estimates.

During the four winters from 1958-59 to 1961-62, 25,182 miles of transects



*A small herd of adult caribou on frozen lake. Photo by D.W. Simkin.*

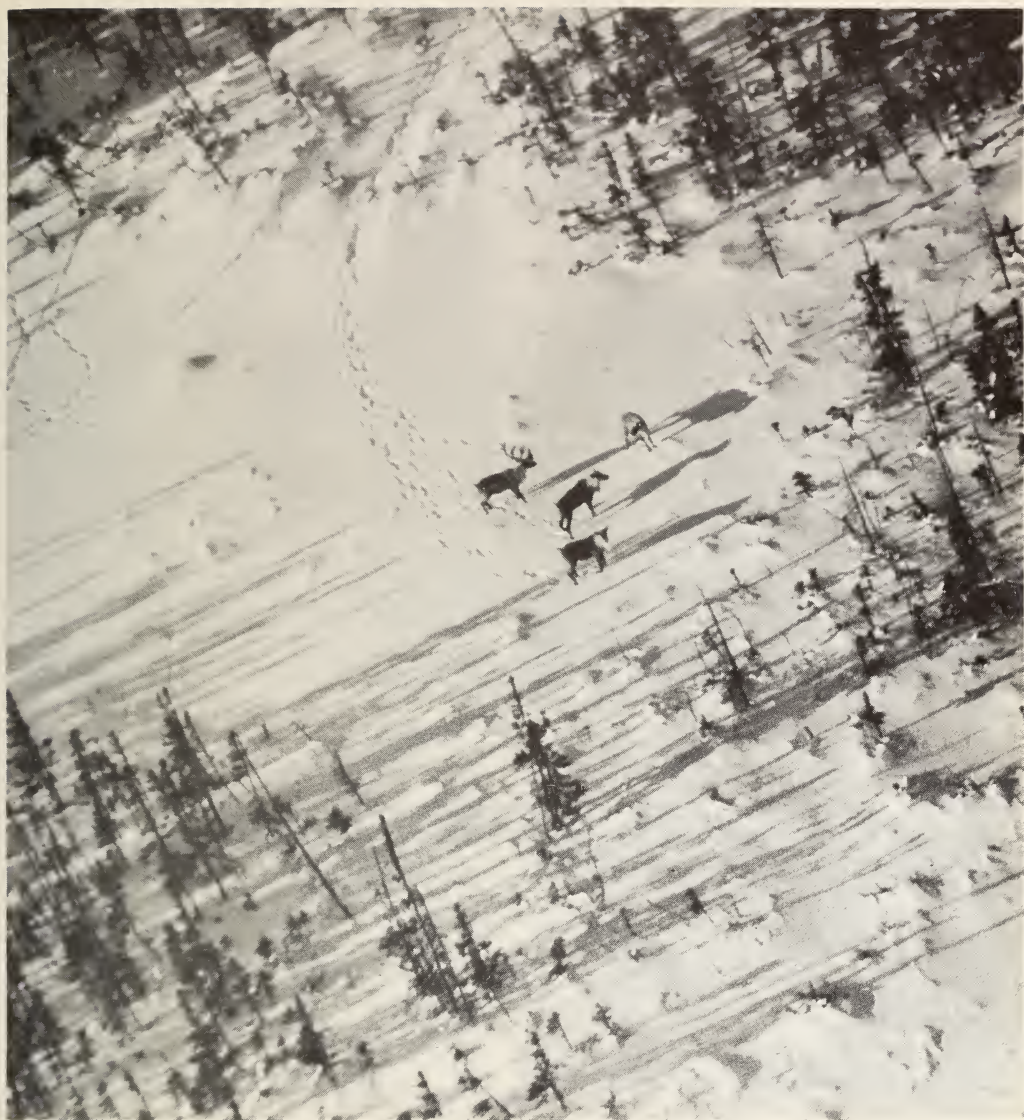
were flown in which 14,778 square miles of caribou habitat were searched for animals. The complete area sampled was 107,043 square miles.

A total of 584 caribou was seen on the transects, giving an average density of approximately one caribou per 25 square miles. The distribution of caribou seen on this survey was by no means uniform. Vast areas of habitat

contained no animals while certain smaller, more suitable areas had densities in excess of one caribou per six square miles.

This survey confirmed earlier suspicions that the best and most heavily stocked range in the Province was in the Hudson Bay Lowlands. The lowlands is characterized by flat topography and resultant poor drainage.





*Segment of larger herd of caribou on Hudson Bay lowlands. Photo by D.W. Simkin.*

Mainly because of the poor drainage, most of the area is covered with bog-loving vegetation such as sphagnum moss, black spruce, larch and leathery-leaved species such as labrador tea and mountain cranberry, which are growing on deep layers (up to 10 feet) of decaying organic matter. Such an environment is ideal for the growth of ground lichens of the genus *Cladonia*. The

presence of abundant supplies of ground lichens is undoubtedly the chief reason for the good densities of caribou.

The sphagnum moss provides a dry site for the growth of ground lichens which in turn constitute the staple food of caribou.

In most of the adjacent Precambrian Shield country which was surveyed, caribou habitat existed only in small

units.

What constitutes good caribou habitat? Woodland caribou are creatures of the old, undisturbed coniferous forests. Almost all food habitat studies related to caribou have indicated that ground-growing lichens (the *Cladonias* and *Cetrarias* mainly) and hanging, tree lichens (old man's beard such as *Usneas*, *Alectorias* and *Evernias*) are the staple items in the menu. Although caribou will eat browse and graze sedges, grasses and other herbs, they must have adequate supplies of lichens or they will disappear from an area either in search of lichens or as a result of starvation.

Unfortunately, lichens are very slow growing plants, adding only millimeters to their stems each year. Also, these plants do not compete very well with higher plants. Since it takes a long time for them to grow and as they are poor competitors, they are usually associated with mature, undisturbed coniferous forests in very rocky or, at least, poor soil areas. For the same reasons, it takes a long time (50 to 70 years) for former caribou range to recover after it has been disturbed by such agents as fire or pulpwood cutting operations.

On the Precambrian Shield area, our survey showed that the distribution of caribou was very spotty. Without exception, the animals seen were associated with mature or over-mature coniferous forests rich in ground and tree lichens. However, because of better drainage in this area, tree growth is much faster and the vegetation is more lush than in the northern Hudson Bay Lowlands. This has worked against caribou in at least two ways. Firstly and probably most important, the thicker

stands of conifers run a greater risk of being destroyed by forest fire (ignited either by lightning or humans) simply because there is more available fuel per unit or area. Secondly, the better growing stands of conifers are of great commercial value for both the pulp and timber industries. Whether the mature forest is destroyed by fire or cut by man, the result is the same for caribou—destruction of the food supply.

In most of the ground surveyed, the areas cut by commercial enterprises were not large; the areas destroyed by fire were immense, however. As a result, in the Precambrian Shield area, small isolated aggregations of caribou are confined to islands of suitable habitat surrounded by a vast sea of forest in earlier stages of growth.

Unless concentrated, positive steps are taken soon to preserve large areas of remaining climax coniferous forest, there is a real risk of losing the remaining southern caribou range with each passing year.

At present, many small pockets of range, of 50 to perhaps 750 square miles in area, still exist and contain populations of caribou throughout the Shield country. One of the more southern herds in the Province is found on the Slate Islands in Lake Superior. Another herd traditionally can be found within a few miles of White River. This herd occasionally stops traffic on the Trans-Canada highway as the animals move across the thoroughfare.

Most people think of caribou as the smaller, barren ground subspecies which undergoes extensive annual migrations and travels about in enormous herds, sometimes numbering in the tens of thousands. Conversely, although it appears to be a restless beast, the





*Close view of adult female caribou, swimming. Photo by E.M. Addison.*



*Note erect tail and buoyancy of swimming cow with calf. Photo by E.M. Addison.*

woodland caribou does not as a rule move very far from summer to winter range and is not usually found in herds numbering more than 40 to 50 individuals.

Woodland caribou are more gregarious during the fall and winter than at other times of the year. This is likely due to rutting behaviour and restrictions on their movement by snow. During the late spring and summer, bulls tend to be solitary, and cows and calves either stay by themselves or associate mainly with others of the same sex and age.

What is the economic importance of woodland caribou in Ontario? At the present, in certain areas it is an extremely important resource to Indians, and in the future it has great potential both as a tourist attraction and as a game species.

There has not been an open season for caribou in Ontario for sportsmen since 1929; however, Treaty Indians in the more remote parts of the Province still hunt them and depend on them for existence. Between 300 and 500 caribou are killed annually by Treaty Indians, mainly hunting in the Fort Severn, Winisk and Attawapiskat band areas, all of which are in the Hudson Bay Lowlands. These people depend on caribou meat as an important source of protein during the winter months. The hide is highly cherished as raw material for making such items as moccasins, slippers, and mitts. These are used by the natives and goodly numbers are sold in the souvenir trade which, at present, is increasing rapidly.

Preservation of the habitat and the caribou population as a source of food and leather for these natives is one of

the main objectives of the provincial caribou management program. Unlike the Shield country where young forests, produced by fires or cutting, provide good moose and white-tailed deer range, the muskeg country usually just goes out of production as far as big game is concerned until it can again support a population of caribou.

When adequate data are available, a hunt for sportsmen may be possible in the northern areas. This would provide the natives, who would act as guides and outfitters, with an added source of income in a country where forms of employment are few indeed. At the same time, a number of sportsmen would be provided with an opportunity to bag, what is to many, one of the most handsome game animals in North America.

The possibility of a restricted hunt in the southern areas sometime in the future is also real. Some of these southern populations probably are already limiting their own numbers. Rather than have such a waste of a fine resource, closely regulated hunts would provide good recreation and, at the same time, assist in the wise management of the herds.

Although it is very difficult to attach a monetary sum on the thrill one gets at seeing or photographing woodland caribou in their natural environment, the value is real. In southern accessible areas, preservation of herds, to be used exclusively for this purpose, perhaps should be one of the objectives of the management program. Perhaps some day, in the future, an economist may be able to assess the value of woodland caribou as a tourist attraction. I am willing to wager that it will be a substantial sum.



# THAR'S GOLD IN THEM THAR HILLS

by Carl E. Monk

*Fisheries Management Officer, Port Arthur Forest District*

*(Photos by the Author)*

The old adage, "Thar's gold in them thar hills", often breathed disappointment. To many a weary prospector following a will-o'-the wisp, the dreams of fame and fortune spiralled like the smoke from his countless campfires—ending in the sky. Remains of abandoned gold mines at Lingman and Favourable Lakes in northwestern Ontario testify to such vanishing dreams. But between these two mines, there's gold that has not vanished---gold that inhabits Sandy Lake and is harvested by the conventional ton. It may be safely argued that "all that glitters is not gold" but you'll never convince the local people that the glitter swimming in Sandy Lake isn't gold. There are 680 members of the Deer Lake Band of Indians living at Sandy Lake, and it's a safe bet that each benefits from the tons of gold-eye that are harvested there yearly.

How did this fishery come into being? Was it the expert decision of fishery officials or the discriminating taste of a gourmet in some exotic city? Was it the collapse of the goldeye fishery in Lake Winnipeg or the natural growth of our own economy?

A generous Nature, a unique fish and a restless people have all combined to provide this northern community with an industry.

Sandy Lake is situated some 230 air miles northwest of Sioux Lookout, Ontario, at Latitude 53° and longitude 93°. It has been described as a widening of the Severn River. According to

geologists, its history goes back to the Pleistocene era when it was once part of the giant Lake Agassiz. Since then, hundreds of centuries of unrecorded time have fashioned the unusual gold-eye habitat: glacier after glacier advancing and retreating, forest after forest growing and dying and falling into ruin and decay; river after river flowing and ebbing in mud and ooze. Who knows what terrible creatures struggled for survival in its depths. Today, this lake, as seen from the air in summertime, appears as a large mud smear across a green tapestry. It has a water area of 192 square miles and a shoreline length, including islands, of 421 miles; the maximum depth is 120 feet but the average depth is only 17.6 feet. Its turbid, swiftly moving waters are heavily laden with suspended particles, and light penetration extends only one and one-half feet beneath its surface.

It also took a long time for man to change his taste from uncooked raw fish to the present processes of cooking---broiling, savouring, salting and smoking, to mention a few. Smoked goldeye from Sandy Lake are a delicacy served to a distinctive clientele in larger centres throughout Canada. Served in the smoked form, these fish are considered by many to be the ultimate in fine cuisine.

Scientists tell us that most fish are highly specialized, and the goldeye (*Hiodon Alosoides*) is no exception. It is a narrow, deep-bodied, silvery fish averaging 10 inches in length, and it is



*Indian children, cleaning goldeye at Sandy Lake.*

covered with large, loose scales. It has a small mouth with needle-like teeth on both jaws and on the tongue proper. It's truly a delicate fish. It is found in scattered locations throughout central North America from Texas northward to the Great Bear Lake region in the Northwest Territories. It inhabits the Mississippi River drainage and the Athabasca and Saskatchewan River deltas. In Ontario, it is found in Sandy and Abitibi Lakes and in most lakes through which the Severn River flows. Not all goldeye from these waters are suitable for the market for many lack sufficient fat content to permit smoking. Goldeye from Lake Abitibi are inferior in quality to those of Sandy Lake. Two

tons harvested at the former in 1954 were accepted by commercial fish buyers under protest at five cents per pound.

Goldeye prefer a habitat of muddy waters heavily laden with suspended particles. During open water, they live very near the surface, swimming, feeding, spawning and probably dying in the upper part of the lake. Even their eggs are semi-buoyant. The fry hatch in late spring and feed on microscopic plants and animals. Fingerling, juvenile and adult goldeye cram their stomachs with aquatic and terrestrial insects, thus putting to good use their many sharp teeth. Sometimes even mice are snapped from the surface of the water, and





*The Severn River. Goldeye inhabit most lakes through which it flows.*

occasionally small fishes are eaten by these little predators. Feeding habits are usually governed by the hatches of land insects near the shore and the mating flights of aquatic insects at dawn and dusk.

The Indian families of Sandy Lake welcome springtime by moving to their summer homes along the Severn River between Sandy and Finger Lakes. Here, they plant gardens and go fishing as they have done for generations. Sunrise on the first day of June finds a small armada of canoes bound for the goldeye banks in Finger and Sandy Lakes. Most canoes are powered by tiny outboard motors. Because of intuition or super-

stition, the motors are shut off and the canoes are paddled the last mile. These Ojibways claim the noise of the motor chases the goldeye from the clay banks. Weathered hands spin in the gill-nets while skilled hands manoeuvre the canoe across the favourite shoal or shallows. Goldeye nets are narrow (about 24 meshes deep), of white nylon with a mesh size of 3-3/4" extension measure--they are always floated with the corks on the water. Seldom are goldeye entangled deeper than two feet below the surface. The fishermen run the nets at sunset and sunrise rather than allowing them to fish continually overnight claiming that the noise of splashing goldeye caught near the cork line warn the



*Goldeye being loaded on aircraft for shipment to Island Lake.*

others and cause them to flee. As the nets are run, careful hands pick the goldeye from the twine and place them in boxes, care being taken not to bruise the fish by rough handling. Goldeye are usually kept separate from the walleye, sauger, perch, pike whitefish, cisco or ling which may be taken in the same nets.

But the end of the capture is only the beginning of the journey for this fish.....It's a long way from the solitude of Sandy Lake to some crowded city. Rushed from the fishing grounds to the packing shed at the village, the goldeye are cleaned, sorted and packed in flake ice. Cleaning means removing

only the insides; the head, tail, gills and fins are left intact. Appearance is very important. Goldeye are sorted according to weight; the smaller ones under ten ounces are separated. Most of these fish seldom weigh more than two pounds.

During the past few years, most of the fish from Sandy Lake have been flown by aircraft to a modern filleting plant at Island Lake in northern Manitoba (approximately 40 minutes by air). On good days, Norseman, Husky, or Cessna aircraft stagger out of Sandy Lake, loaded with fish, and head for Island Lake. Here, the perishable fish are re-iced and stored until sufficient



tonage is accumulated for the final air lift in a large P.B.Y. Canso to Winnipeg.

Plain, fried goldeye tastes like putty but, at the fish plant in Winnipeg, the experts perform culinary magic. By being immersed in a mixture of salt and water and secret spices for a limited time, the fish are subjected to the process known as brining. To the brined fish is added an exact measure of reddish, tasteless dye. Finally, they are smoked slowly in a heat-controlled atmosphere for several hours.

This fish that was spawned in a quiet eddy of a remote lake, this growth of seven years that toiled and struggled is now ready for any connoisseur. Individually cello-wrapped and labelled "Winnipeg Goldeye", they are distributed to fashionable markets throughout Canada.

Smoked goldeye were first marketed in the United States in 1924. These came from the Red Lakes of Minnesota. Since then, the demand has increased faster than the supply. Huge populations in Lake Winnipeg and elsewhere have dwindled. Now, most of the production comes from Lake Claire and the Athabasca River delta in northern Alberta, the Saskatchewan River delta, and from Sandy and Finger Lakes in northern Ontario.

Commercial fishing for goldeye at

Sandy Lake began during the "Forties". Prior to 1949, the largest annual catch was nearly 100 tons, but production of goldeye since then has varied from six to forty tons. Indians at Sandy Lake hold the only commercial licences to fish Sandy and Finger Lakes.

This fishery is of real value to the Indians of Sandy Lake, constituting a regular source of income to the Band. To a people involved in a humdrum way of life, it represents a great deal more--an escape from a boredom which would otherwise occupy their summers.

From a practical viewpoint, this goldeye fishery should endure. Sandy Lake does not offer any particular attraction to the cottager or the sportsman. The topography of the area is not particularly inviting, and the fishery is for the most part comprised of commercial species which are not regularly taken by angling. Furthermore, the management of the fishery is being directed towards the perpetuation of this valuable resource at the highest possible level.

This is the story of the goldeye fishery at Sandy Lake, Ontario. This is why the word "goldeye" means more than just a species of fish to the residents of this northern outpost--at least until some Geiger-counter strikes a new staccato. . . .

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*Indian mother and child at Fort Severn. Photo by M. Toms.*



# THE FORT SEVERN GOOSE HUNT

by John L. Lessard

*Fisheries Management Officer, Sioux Lookout Forest District*

*(Photos by the Author)*

Prior to 1962, regulations prohibited travel for the purpose of hunting in the portion of the Patricias known as the Hinterland Area. These regulations were rescinded in 1962, permitting hunters to travel to Fort Severn to shoot geese. The Resources Development Agreement between the Federal and Ontario Governments came into being in 1963; this agreement provided assistance to the Fort Severn Indians for the establishment of a goose hunting camp. In the fall of 1963, construction was completed and for the first time the camp opened its doors to the visiting hunters.

The camp is located approximately three miles from the Cree settlement of Fort Severn on the Severn River. Hudson's Bay can be seen four miles to the north. Tent frame-type cabins, equipped with double bunks, gas lamps and wood stoves, provide comfortable sleeping accommodation. The camp is

run on a light housekeeping basis, and a fully equipped kitchen is situated nearby.

In 1964, outpost camps were erected on two of the coastal rivers, providing access to good brook trout fishing as well as goose hunting.

To the visiting hunters, the Fort Severn camp offers a wide choice of sporting activities. The geese are always plentiful, from the beautiful snow geese and the graceful blues to the wary Canadas. Ducks of numerous species abound on the small weedy potholes dotting the area. Willow ptarmigan are also found in large numbers within walking distance of the camp.

The camera fan is also offered some unique opportunities; on occasion, a graceful woodland caribou or a majestic polar bear can be photographed – the latter at long range, of course.

In its two years of operation, the Fort Severn camp has accommodated 212 visitors from Canada and the United States. They and their guides accounted for 374 Canada geese, 16 Richardson's geese, 2303 snows, 1551 blue geese, 169 assorted ducks and 120 ptarmigan. The camp has provided an income of approximately \$10,000.00 yearly to the Indians in the form of guiding fees, canoe and motor rentals, the sale of mocassins, etcetera. This is a tremendous boost to the economy of this isolated coastal village



*A successful morning's shoot.*



*The main camp  
at Fort Severn.*



*The Indian village  
at Fort Severn.*



*Jack Stoney, camp foreman.*



*Hunters arrive by  
air at Fort Severn.*



*View towards Hudson  
Bay from camp.*



where the annual income of a family man is estimated at \$500.00 from all sources.

The success of the camp can be attributed largely to the Indian guides. The Fort Severn guide is an accomplished outdoorsman, excellent canoe-man and skilled goose caller, and he has an intimate knowledge of the country. Perhaps, his most remarkable physical quality is an uncanny ability to get about in this flat, deceiving land so often shrouded in thick fog.

The establishment of the Fort Severn Goose Camp is an important factor in focussing the attention of the Canadian and American hunter on this, so often forgotten corner of the Pro-

vince. In their never ending search for virgin country and unspoiled waters, hunters and fishermen, alike, are increasingly looking toward this new frontier. For those who prefer a canoe trip, the area offers a maze of rivers and lakes, many of them never disturbed by the paddle of the white man.

To the Indians inhabiting the area and depending largely on trapping for their livelihood, the establishment of the camp has created a new source of income, a more abundant and varied diet and an incentive to improve their existence. Of greater importance, the task of operating their own camp, perhaps, has provided them with a new purpose in life.

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*Loading fingerlings on truck in restocking project. Photo by R. Muckleston.*



## FISH STOCKING---1965 STYLE

by Carman Douglas

*Fish and Wildlife Supervisor, Parry Sound Forest District*

By the time of year when the setting sun retreats each night in advance of a heavy frost, most of our fishermen have hung up their tackle and turned their thoughts to other pursuits. Not so those who are charged with the management of our lakes and streams. These men find themselves engaged in the analysis of survey data gathered throughout the summer, deciding which lakes and streams are to be stocked and with what species and what size and how many and when. The men are also engaged in caring for millions of eggs now incubating in hatcheries throughout the Province and in feeding and caring for the many fingerlings being held over to yearling size at the rearing stations.

Throughout the winter, these operations continue in an effort to meet the springtime deadline when all must be in readiness.

By the time the days become noticeably longer and the mid-day sun is making headway with the snowbanks, the disciples of Isaak Walton have begun the overhaul of their springtime fishing gear and have also begun to make their queries concerning which lakes and streams were stocked last year, and which ones are on this year's lists and so on. Often these queries come with every attempt at disguise in the hope that no one will recognize that the query is really concerned with a pet fishing hole which — the enquirer hopes — is known to no other fisherman than himself.

The enquirer often succeeds in this

ruse by merely asking for a copy of the stocking lists which many districts prepare each year. These are available to all who care to call at or write to the District Office of the area concerned. The lists show the name of the lake or stream and give the location by township, lot and concession to avoid the difficulty created by a difference of opinion concerning the "right" name for a body of water. Cartographer's designations are often at odds with locally-preferred names. The species of fish, their size and the number are also shown for each waters planted.

A detailed card-index system (which has been developed over many years in most districts to cover virtually every popular lake and stream in the area) is used in planning the fish distribution program. The index is based on planting traditions of long standing and is in continuous modification based on the results of detailed surveys which are conducted each year. This eliminates great piles of paper, "Applications for Fish" that formerly poured into the offices, often duplicated half a dozen times by separate individuals who had a concern for the same body of water. Considering the hundreds of lakes and streams in a district and the several names that different people have for the same body of water, the old "Application" system involved stacks of paper which would make a saint turn blue. We still appreciate the occasional formal application for fish or a letter of enquiry



*Fish stocking at Lake of the Woods in 1920. Photo by Linde.*

on the matter, but the paper war has been reduced to manageable proportions, and the annual battle ("What lake does he really mean?") has been almost eliminated.

Initially, the change did require a good deal of letter writing to explain the program but, once the procedure was clearly established, it was possible to carry out the fish planting operations on a more efficient and business-like basis.

Some bodies of water, heavily utilized, appear on our lists every year; some, every other year; and some, only occasionally, depending upon the popularity of the water and the fishing pressure to which it is subjected.

Looking over last year's lists, for

Parry Sound District, we find a total of 351 individual plantings involving five hatcheries and seven species of fish, varying in size from fry and fingerlings to yearlings and adults — a total of over 434,000 fish. Consider this for the entire Province and we find the figures entering the millions. Handling fish in these numbers (apportioning them properly to the various waters and assuring their safe holding and transport over long distances) has come a long way during the 65 years for which we have stocking records for the Parry Sound District, alone.

In the "good old days", which are probably better in retrospect than they were in fact, and must surely have improved with each retelling of the tale,





*Dropping brook trout fingerlings from Beaver aircraft. Photo by R. Muckleston.*

it was the custom to deliver fish to John Doe at a prearranged spot and he took them from there to their appointed destination -- or did he? Those intimately associated with the hatchery program of years ago have a different story to tell. Transport was slow and roads were poor, aeration was difficult and ice wouldn't last forever. Often, the fish arrived at John's place in pretty rough shape, and not infrequently many were dead. John took what was left, ostensibly for the lake shown on his application. Halfway back, the fish in his pack-can started to "belly-up" again, or maybe John just got tired -- and maybe it was just coincidence, too, but all this happened right next to his favourite, secret pond on the back 40 and there John dumped the

fish. Didn't bother to tell anyone about this because someone might believe he'd planned it that way, so -- what the heck -- he saved the fish didn't he, even if they didn't travel well and a lot were lost and they didn't really arrive at their destination at all but did end up in a spot known to, and fished only by, John. Good Old John got a big kick out of this, but sooner or later everybody wised up, and it didn't please John, but then the fish were paid for by public funds which were intended to provide fish for public use.

More efficient methods of raising, holding, transporting and distributing fish evolved as technical advances were made. Roads improved, aeration improved, trucks replaced wagons and

eventually aircraft entered the picture. Now the use of oxygen, buffered water, special containers, drugs, aircraft apparatus, special marking and improved foods are common everyday items in our fish-cultural bag. Fish are often brought in from hatcheries one hundred miles or more away, planted in remote lakes without loss, and the 'plane, having delivered its costly cargo, is back at its base; total time elapsed, only an hour or two. John is mad but then there are lots of private hatcheries which will sell him fish for his private, secret pond on the back 40 and -- we happen to have lists of these hatcheries for anyone who'd care to do a bit of stocking on his own.

Two-thirds of our plantings are made in this fashion -- rapid, loss-free, highly-efficient. The remaining third still goes via truck--now a vastly improved vehicle, handled by persons who know the district well and work in close conjunction with the conservation officers. Most of these fish are for streams or lakes which are close to good roads.

Sometimes stream plantings involve a good deal of labour in order to distribute the young fish properly throughout the watercourse. Many members of the public make a contribution to the program here. Others who are interested in this work may contact their local conservation officer who will let them know just when they can help him on their favourite stream. Distribution schedules depend upon many factors. Unfortunately, too many to permit much notice but, whenever possible, we hope that this can be arranged.

From ours and the fishes' point-of-view, the modernization of methods in

handling fish distribution has been a boon -- they get there alive. From ours and the general public's point-of-view, it's been a boon since the fish get to their proper destination -- after all, the general public paid for them. From the interested public's point-of-view, it's a boon -- they don't have to pack them in any more which, as anyone who has packed will know, can be tedious and a cold, wet chore.

And what about Good Old John? Well, he still argues that things were better in the good old days and he'll say anything to support his case such as "air-dropped fish don't survive" or "the fish die from too much oxygen" or "get air sick" or something else. All untrue, but -- well, we hear a lot about computers taking over these days, separating the worker from the product and while we haven't gone that far with distributing fish, I'm afraid we have separated the public from a lot of real hard work. Funny, but I never thought we'd have to apologize for that. Perhaps, we do. But anyone interested in helping can still do so by just calling their local conservation officer.

And what about that private, secret pond on Good Old John's back 40? Well, you just tell John that we've got those mimeographed sheets showing the names and addresses of all licensed private hatcheries in Ontario and we'd be glad to send him one. In the meantime, we'll do our very best to get fish to their proper destinations in the very best of shape.

As soon as the plantings are over, we print the lists mentioned before and you're most welcome to one. Just write in -- and, in the meantime, "GOOD FISHING" to you.

# INDIAN TIME

by *Dr. Edward S. Rogers*  
*Royal Ontario Museum*

A few years ago, a young Ojibwa in northern Ontario was interested in starting a store in his village. I was doing field work at Round Lake at the time, and Joseph Sakechekapo ..... for that was his name.....talked to me about his project. Joseph was an intelligent young man of twenty-nine. He was sure he could build a small store and import the necessary goods. I asked him how much mark-up he would place on the goods. He said he would sell them for exactly what they cost him. When I told him he should charge a certain percentage above the cost, Joseph was upset. If he did, he said, he would be stealing from his people.

Now why did Joseph feel this way? The fact is, he had no knowledge of how a business is organized. He had never heard of the profit motive. Let's leave Joseph for a few minutes and come back to him later. For the moment, I'll just say his confusion was based on the Indian attitude to time.

Now, we have our own concept of time, and it's not at all like that of the Indian. We say, "Haste Makes Waste", and "Your Time is Running Out", or "Early to Bed and Early to Rise, Makes a Man Healthy, Wealthy and Wise". You may be paid by the hour, and you take your holidays according to schedule.

Our concept of time has another dimension and that is that we con-

stantly look to the future, ever thinking of tomorrow. We do not look back. We don't worship our ancestors as do, for instance, the Chinese.

But the Indians of Canada have a different concept of time from ours. Their concept of time, though, is just as valid and eminently suited to the way of life that they pursued in the past, and do, to some extent, today.

The Indian thinks of the present a great deal more than we do, and less of the future. There is good reason for this, given the way of life that the Indian has evolved over the centuries. His life was not an easy one, living as he did by hunting, fishing and trapping. Game was scarce, food was minimal, and he had always to be on the lookout for game animals. He had to be always ready to take advantage of any source of food that presented itself. There were also many tasks that had to be performed immediately. Accordingly, each day was a challenge to him if he was to survive. He couldn't spend time thinking of the future; the present was too close to him.

In 1953 and 1954, my wife and I were travelling with the Mistassini Indians of central Quebec. We were there to conduct a year's ethnographic study of these Indians. From late August until early June, we lived with one hunting group. Usually, we lived in a tent next to the group, but on oc-

\* This paper was first given on the C.B.C. "Speaking Personally". I wish to thank the C.B.C. for permission to publish this talk.



casion we shared their lodge. We were constantly with them and, as members of their party, received their hospitality. It is a deeply instilled value of the Mistassini and other Indians to share. Whenever a hunter killed a game animal, it was shared with all the other members of the group including ourselves.

Alfie Matoush was in charge of the group we accompanied, and the total number of Indians was thirteen. During this time, we travelled some 200 miles north of the trading post on Lake Mistassini to the hunting territory occupied by Alfie Matoush and the other hunters with the party. The winter was spent in moving about their land in search of furs and food. While there was open water, travel was by canoe, sometimes aided by an outboard motor. But when the land was covered with snow, travel was by means of toboggan and, occasionally, dog-sled. We could never understand their daily movements. There was no set hour at which we all rose and began the day's journey. Some mornings, we would be startled by the fact that all the tents were down even before we awoke, and then again, other mornings, we would be prepared to move at what we thought to be a reasonable hour, but not the Indians. We were puzzled, but eventually we came to understand that they did know what they were doing. The weather signs were such and such and, accordingly, their movements were dictated by these and other conditions.

Or, when travelling, game might be sighted and the men would take off after it. This might consume one hour, two hours or four hours, but food was ever necessary and the time must be

spent this way, and yet any scheduling of the day's journey was totally disrupted on this account. We, who are conditioned to precise scheduling, feel hopelessly frustrated under such conditions, but to the Indian it is the proper way of life and it did ensure his survival. If he were to follow the clock, he would perish.

Alfie's hunting group was still living in the age old tradition of the Indian—indeed, that was why I was with them that winter. They, like their ancestors, followed no clocks or watches—nor did they need to. Rather, they had to have a flexibility in the ordering of their time. They could not be chained to the hour, but rather had to take advantage of each opportunity as it arose. They were dependent upon the alterations in weather conditions, food in camp that had to be processed, health and age of the members of the party and the random movements of the game that they were seeking. It was these factors, happening in combination, that determined their actions.

And yet, this does not mean that the Indian has no foresight. He most certainly did, and still does. Alfie Matoush and his hunting group had taken precautions for the future. It was approaching spring, and we were running out of food, and the nearest trading post was 200 miles to the south of us. I began to question the Indians as to what they might do in case our small stock did eventually run out. Alfie pointed out that, although we had little food in camp, there was food elsewhere within the territory. Over the years, they had carried in flour and had cached it here and there throughout



*Indian family near Ogoki. Photo by R. Muckleston.*

their land. And, as he said, if they were running low, they could always reach a supply. This certainly indicates considerable foresight on the part of Alfie Matoush and his group.

There is another important aspect of time in which the Indian differs from the Euro-Canadian. The Indian does not value time as we do—certainly not his own time. It has no dollar value.

And this is where we come back to Joseph Sakechekapo. When Joseph

told me it would be cheating people to charge a mark-up on goods in his store, we had a long talk. I pointed out that he would have to spend the entire year in his store. Therefore, he would be unable to go trapping or do any commercial fishing as he had in the past. Where would his income come from? He would have to make a profit on the goods he sold if he was to live. This, he found difficult to understand. He couldn't see that his time standing behind the counter was of any value.





*Indian trapper resets trap for beaver below ice near James Bay. Staff photo.*

Joseph had never heard of the saying, "Time is Money".

Reasoning this way, many Indians have claimed that the trading companies are stealing from them. They cannot understand that an extra charge must be made to support the facilities of the trader.....to pay him, at the very least, for his time.

Yes, time means one thing to an Indian, another to a Euro-Canadian. Time is a basic value and differs between the two cultures. This is one reason why the Indian so often has difficulty in adjusting to our way of life. When the Indian faces our ways, he cannot find an easy adjustment. He is bound to his time as we are to ours. So when the Indian is criticized

as unreliable and unable to hold a job, we must remember that he has never had to think in terms of "Another day, another dollar". Given his own concept of time, the Indian is steady, is reliable.

And sometimes he can make the adjustment. The following story was recently told to me. One Indian from northern Ontario had become the foreman in an industrial plant in Toronto. Years later, he was recalling his first days in the city....that painful time when he had just come from the reserve to punch a clock for the first time. What was strangest to him, he was asked. Seeing the white man running to catch a bus, he said. But he added... ..in a few weeks I was doing the same.



# THE EXPERIMENTAL TRAWL FISHERY

## IN BLACK BAY, LAKE SUPERIOR

by C.A. Elsey

*Fish and Wildlife Supervisor, Port Arthur Forest District*

Change must inevitably bring change. Since World War II, the economics of commercial fishing have been changing — sometimes rapidly, sometimes slowly; sometimes dramatically, sometimes almost unnoticed — but always changing.

Briefly, the changes have been towards more costly production because of more costly equipment and more costly labour. Consumers have become more and more demanding where quality is concerned. Competition from the Atlantic and Pacific fisheries has increased.

The commercial fisherman must turn to methods that will produce fish of better quality for less money. We have all watched changes in the methods of other primary producers such as farmers and timber operators. Similarly, fishermen are faced with the necessity of changing their methods.

The Lake Superior herring fishery, basically, is still using the traditional methods of father, grandfather and great grandfather. The old method of fishing is to use a 2½" stretched mesh gill-net, set in about six or seven fathoms of water. The nets are lifted and taken to a crew of people to remove the herring.

The crew are known as "herring chokers" because of the method of removing the fish from the net, and the fish are correspondingly known as "choked herring." The fish are noth-

ing less than a mess, having been forced through the net with resultant breaking, tearing and mashing of fish. They are saleable as animal food, only. Labour is usually paid on a share-the-profit basis, and the crew works long, hard hours in severe cold conditions. The work is unpleasant, with the crew standing knee-deep in choked fish. Backs and arms become unbelievably weary, and wrists swell with the unaccustomed exertion. The weary worker goes home smelling like the fish he has been working with. "Herring choking" crews are almost unobtainable and, when they are located, their employers have difficulty in keeping them.

It has become most important that the fishery change its methods. Two new methods are worthy of consideration — impounding gear and trawls. Trap-nets have been tried but, because of the strong currents and operating depths (six to seven fathoms), they are not useable. Trawls were the next type of gear tested.

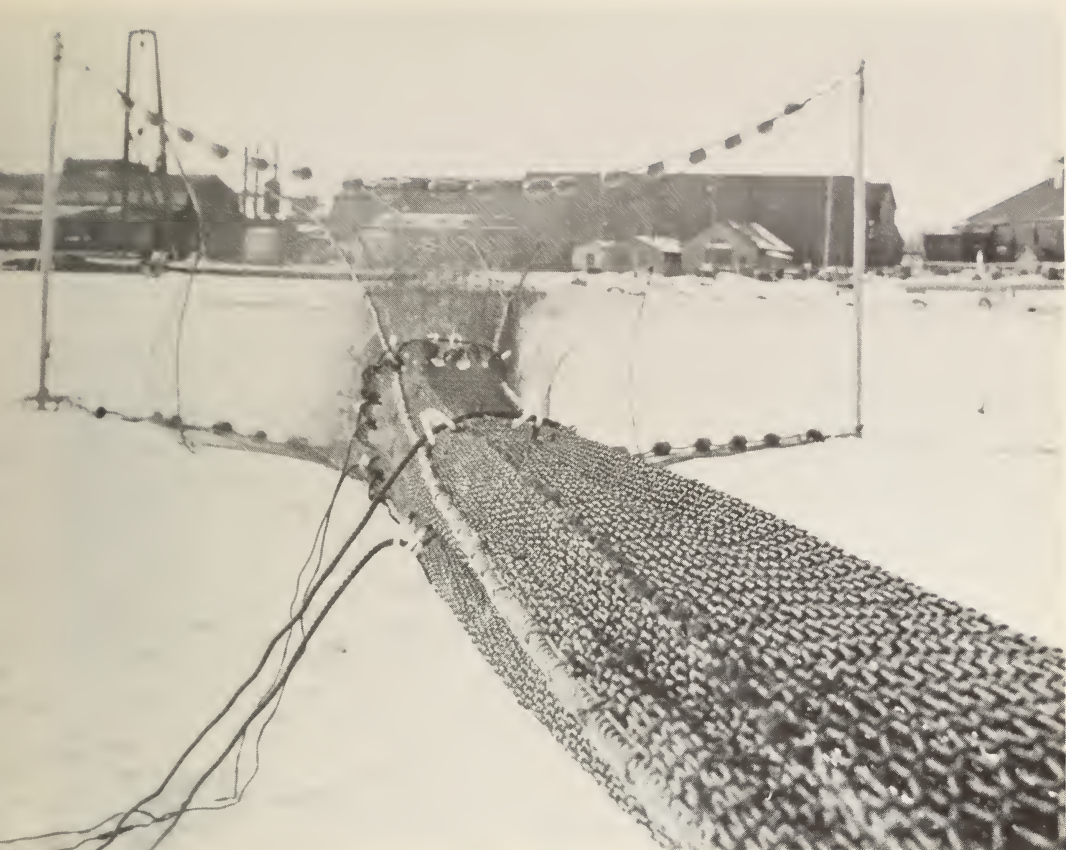
In 1959, Victor Bergman of Pass Lake attempted to trawl for herring. He did not succeed, probably because of lack of training and an inadequate boat. His gear may also have been unsatisfactory.

In 1962, Tom Chevrier of Hurkett decided that it was worthwhile to invest considerable money in experimenting with trawls, and he took his whole



*Herring float to the surface as a trawl net is hauled towards the boat. This net was hauled about half an hour. Photo by W.L. Sleeman.*





*A trawl net, viewed from cod end. This net was set up to show its construction. Otter boards are not attached. Photo by H.R. Timmermann.*

crew to Lake Erie to study the trawling methods there. Each of the crew was assigned the responsibility of learning one aspect of trawling and to learn it thoroughly. In addition, many photographs of every aspect of the fishery were taken.

His thorough study of the methods convinced Mr. Chevrier that trawling would be economically sound in Black Bay. He obtained an experimental permit and purchased an operating trawl complete in all details. Mr. Chevrier's boat is big enough and powerful enough to haul a large trawl. The boat required several important modifications including changes in the

superstructure. A power winch, with two heads, had to be installed. There is also a special davit for lifting the cod end of the trawl. His boat is equipped with an electronic sounder that proved invaluable in locating schools of herring.

Thus, Mr. Chevrier equipped himself with a permit to fish herring, a trained but inexperienced crew, a trawl-net known to be in working order and a modified boat. Among the most important ingredients were enthusiasm and a will to overcome all obstacles. The trawl worked, and worked well, in spite of some makeshift gear and an inexperienced crew.





*Cod end, loaded with herring, is lifted into boat. Photo by W.L. Sleeman.*

One of the problems has been making full use of the trawl when the herring run was at its peak. This has been at least partially solved by having a second boat haul fish from the trawling boat to the mainland.

*What has Mr. Chevreir gained through this effort?*

- He was able to operate with his regular crew of fishermen and has been relieved of the problems of dealing with casual labour.
- He has reduced his operating expenses by using a much smaller

crew.

- With gill nets, it is necessary to work when the weather is "unfit for man or beast" since the gear is in the water and must be attended. The trawls are only operated in relatively good weather. Thus, both safety and comfort are improved.
- No gear is lost in winds as sometimes happens with gill nets.
- The fish are landed in excellent condition. In fact, some of them are still alive when they are put into the fish boxes. Consequently,



*Fish have been dumped on the deck of the boat, ready to be boxed for public sale.*

these trawled herring bring about \$10.00 per ton more than "choked herring" (an increase of about 25%).

- The profit on his work and investment has been increased by lower operating costs and greater return.
- His annual catch has not changed a great deal.

*The next question that might be asked is - What does this mean to other fishermen in the Black Bay area and Lake Superior in general?*

- There is a loss of work for casual labour - this may be a question of little importance since the people involved are for the most part hard to persuade to work in the herring fishery.
- The boats and power units required for a trawl similar to Mr. Chevrier's are larger than those presently owned and operated by most commercial fishermen in Black Bay.
- Black Bay fishermen are all interested in trawls and some would like very much to convert their operations to trawling.
- The improved quality of trawled fish could result in a lower demand for "choked herring" if trawl operations are able to meet the quantity demand.
- The better quality produce is opening up new markets in the human consumption field. It is possible, although not yet proven, that future prices will improve for the better quality fish.

*The next question that should receive consideration is - What is the future of trawl net fishing in Black Bay and surrounding areas of Lake Superior?*

- In 1964, experimental permits were issued to three more fishermen. Thus, all large boats in this area now have authority to trawl for herring.
- At the time of writing, two other fishermen with medium sized boats were planning to attempt operations in the fall of 1965.
- Fishermen with small boats may not be able to convert to trawls. The Department now has a much smaller trawl that can probably be pulled with about fifty horse power. It was given a trial run just before the end of the 1964 season and showed promise. It will have to be tried again in 1965.
- Trawls have been tried for smelt but, at the present time, there has been no success. The use of trawls outside of Black Bay has been discouraging, but we anticipate that new efforts will be made to operate trawls.
- Alewives are appearing in quite large numbers in the Thunder Bay area. It has been the experience of the commercial fishermen of the Great Lakes that alewives replace herring. It is not possible to predict that this will happen here, but we should not be surprised if it does. Alewives have little economic value and we do not know whether they could be taken in economic numbers in trawls even if a market was developed.







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